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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,451	11/19/2003	Takashi Nakazato	2003_1652A	3930

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WASHINGTON, DC 20006-1021

EXAMINER

HAMO, PATRICK

ART UNIT	PAPER NUMBER
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3746

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/29/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/715,451

Applicant(s)

NAKAZATO, TAKASHI

Examiner

Patrick Hamo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 February 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

This action is responsive to amendments filed February 9, 2007.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bramstedt et al., 4,842,498, in view of McNaull et al., 6,758,657, and further in view of Steffes, 3,200,757, and further in view of Holtzberg et al., 4,458,555.

Bramstedt discloses a diaphragm compressor including a drive motor 13, an eccentric member 36 connected to a shaft 18 of the drive motor, a con rod 28 connected to the eccentric member, a diaphragm 29 connected to the con rod to be operated when the motor rotates (col. 3, ll. 48-65), and umbrella-like suction valves 45, 46 on the suction 51 and ejection 52 sides, respectively.

Bramstedt does not disclose the con rod including an enlarged end having a plurality of outer surfaces, the con rod having an annular groove at a top of one of the outer surfaces, the con rod being made of a polyamide resin, the rubber diaphragm wrapped around the enlarged end of the con rod, an adhesive interface coated between the rubber diaphragm and the enlarged end, wherein the rubber diaphragm is molded about the enlarged end of the con rod so as to be fitted into the annular groove and integrally united with at least a portion of the outer surfaces of the enlarged end via the adhesive interface so as to be integrally connected to the con rod, wherein the rubber diaphragm constitutes an injection-molded rubber diaphragm injection molded about the

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enlarged end of the con rod, and the rubber diaphragm is integrally united with an entirety of each of the outer surfaces of the enlarged end.

However, McNaull teaches a diaphragm pump with a diaphragm 31 wrapped around a large end (uppermost portion of piston in fig. 1) of a plunger 28 that behaves similarly to applicant's con rod, the enlarged end including a plurality of outer surfaces by virtue of its geometry (see fig. 1), and an annular groove formed to receive lip 33 of the diaphragm, the diaphragm wrapped around the enlarged end of the plunger in its entirety (again, see fig. 1), for the purpose of making a seal between the plunger and the compression chamber 17 so that no other seals are necessary, and the diaphragm provides the lone seal in the entire pumping apparatus (col. 3, ll. 25-33).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Branstedt's diaphragm compressor with the plunger and diaphragm combination of McNaull to more efficiently seal the compressor.

Furthermore, Steffes teaches a diaphragm pump in which the diaphragm 54 was made of rubber (column 2, lines 29-30) which was secured by an adhesive (column 2, lines 30-32) and thereby integrally united to the end of piston 22. It would have been obvious to one having ordinary skill in the art to have combined Bramstedt's invention with that of Steffes in order to manufacture more economically (column 1, line 16).

Also, Holtzberg teaches an amide-imide resinous polymeric connecting rod (28) in order to decrease its weight. Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to have combined Holtzberg's

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invention with that of Bramstedt and Steffes in order to provide lightweight parts (column 1, lines 42-43).

Response to Arguments

Applicant's arguments with respect to claims 1-4 have been considered but are moot in view of the new ground(s) of rejection as necessitated by applicant's amendment.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP §706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Hamo whose telephone number is 571-272-3492. The examiner can normally be reached on M-F 8:30-5.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Stashick can be reached on 571-272-4561. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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